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The papers to be presented before the congress will cover the general field of engineering and will be published in ten volumes.

The papers in general are intended to treat the various topics in a broad and comprehensive manner and with special reference to the important lines of progress during the past decade, the present most approved practises and the lines of present and future development.

The general fee for membership in the congress is \$5, which will entitle the member to receive the index volume and any single volume of the transactions he may select, together with the right of participation in all the general activities and privileges of the congress. The committee of management must know at the earliest practicable date the number of members in the congress. Effective plans in regard to the publication of the transactions, as well as all arrangements looking toward the proper ordering of local affairs during the week of the congress, require this information.

It is expected that there will be arranged a number of excursions to points of engineering and general interest within practicable reach of San Francisco, and every effort will be made to enable visiting engineers to inspect personally such engineering works as are especially typical of engineering on the Pacific Coast. Further information of general interest and importance regarding the congress will be given publicity through the technical press, and to all subscribers notice will be sent containing more complete information as to papers, sessions of the congress, excursions, travel routes and itineraries, hotel rates and accommodations, and other matters of importance.

Mr. W. F. Durand is chairman and Mr. W. A. Cattell is secretary of the committee of management, the address of which is Foxcroft Building, San Francisco.

EDITH JANE CLAYPOLE

THE following minute in memory of Dr. Edith J. Claypole, who died in March, as a result of infection incurred in the preparation of typhoid vaccine for the armies of Europe, has been adopted by the Science Club of

Wellesley College. It has also been embodied in the minutes of the Academic Council:

The Science Club of Wellesley College records its sense of loss in the death of Edith Jane Claypole, a charter member of the club, its first secretary, and active both in its foundation and in its early conduct. Descended from a father who was himself a distinguished man of science, and receiving her early education at home, she was by inheritance and training exceptionally fitted for the line of work to which she chose to devote her life. She early exhibited unusual capacity for research; in the field of cell-studies and pathology her many papers are evidence of her power of achievement. As a teacher she opened the eyes of her students to the beauty and significance of living things, revealed to them the method of science, and inspired them with the high nobility of its aims. Members of other departments recognized the open-mindedness and appreciation that marked her attitude toward all branches of scientific activity. As a physician she early became interested in preventive medicine, and to its advance she devoted herself without reserve. Through her researches in pathology, particularly in certain obscure cases of infection and in typhoid immunization, she won distinction, and in the application of these researches to the needs of humanity, she has now crowned her service with the gift of her life. Her charm of manner and winsomeness of spirit, with a strong and wholesome nature, quick and tender in its response to the needs of others, and her un-failing steadfastness in friendship, endeared her to large circles. We, the members of the Science Club, express our sadness in the loss of a comrade, and our appreciation of her service to science and to humanity.

SCIENTIFIC NOTES AND NEWS

THE Civic Forum Medal of Honor awarded annually for "distinguished public service" has been presented to Mr. Thomas A. Edison.

DR. ABRAHAM JACOBI was the guest of honor at a dinner in the Hotel Astor given by the physicians and officers of the Bronx Hospital on the occasion of his eighty-fifth birthday.

AT the annual meeting of the American Academy of Arts and Sciences, held on May 12, at its house, 28 Newbury Street, the following officers were elected:

President, Henry P. Walcott; *Vice-presidents*, Elihu Thomson, William M. Davis, A. Lawrence

Lowell; *Corresponding Secretary*, Harry W. Tyler; *Recording Secretary*, William Watson; *Treasurer*, Henry H. Edes; *Librarian*, Arthur G. Webster; *Chairman of Rumford Committee*, Charles R. Cross; *Chairman of C. M. Warren Committee*, Henry P. Talbot; *Chairman of Publication Committee*, Edward V. Huntington; *Chairman of House Committee*, Hammond V. Hayes.

At the annual election of officers of the Boston Society of Natural History, the following were chosen: *President*, Edward S. Morse; *Vice-presidents*, Robert T. Jackson, Nathaniel T. Kidder, William A. Jeffries; *Secretary*, Glover M. Allen; *Treasurer*, Edward T. Bouvé; *Councillors for Three Years*, Charles F. Batchelder, Reginald A. Daly, Merritt L. Fernald, William L. W. Field, John C. Phillips, William M. Wheeler, Edward Wiggleworth, Mary A. Wilcox.

THE Barnard gold medal awarded every fifth year by Columbia University, on the recommendation of the National Academy of Sciences, "to that person who, within the five years next preceding, has made such discovery in physical or astronomical science, or such novel application of science to purposes beneficial to the human race, as may be deemed by the National Academy of Sciences most worthy of the honor," will be given this year to William H. Bragg, D.Sc., F.R.S., Cavendish professor of physics in the University of Leeds, and to his son, W. L. Bragg, of the University of Cambridge, for their researches in molecular physics and in the particular field of radioactivity. The previous awards of the Barnard medal have been made as follows:

1895—Lord Rayleigh and Professor William Ramsay.
1900—Professor Wilhelm Conrad von Röntgen.
1905—Professor Henri Becquerel.
1910—Professor Ernest Rutherford.

THE Butler gold medal to be awarded every fifth year by Columbia University for the most distinguished contribution made during the preceding five-year period to philosophy or to educational theory, practise or administration will be given to the Hon. Bertrand Russell, F.R.S., lecturer and fellow of Trinity College, Cambridge, for his contributions to logical theory. The Butler silver

medal is to be awarded to Professor Ellwood Patterson Cubberley, of Leland Stanford Jr. University (A.M., Columbia, 1902; Ph.D., 1906), for his contributions to educational administration.

THE city of Philadelphia, acting on the recommendation of The Franklin Institute, has awarded the John Scott Legacy Medal and Premium to Herbert Alfred Humphrey, of London, England, and to Cav. Ing. Alberto Cerasoli, of Rome, Italy, for the Humphrey Pump, a device for raising water by the direct application of the explosive energy of a mixture of combustible gas and air. In the pump, the momentum of a moving column of water is utilized to draw in and compress in a suitable chamber a charge of the gas mixture whose explosion raises the water.

THE Edward Longstreth Medal of Merit of the Franklin Institute has been awarded to the late Mr. George A. Wheeler for his escalator. The basic invention was first disclosed in a patent granted to Mr. Wheeler in 1892, and a number of patents were subsequently issued to him for improvements and developments.

AT the annual meeting of the Boston Society of Natural History, held on May 5, the two annual Walker Prizes in Natural History were awarded. The first, of sixty dollars, was given to Miss Emmeline Moore, of the department of biology, Vassar College, and the second, of forty dollars, to Miss Edith B. Shreve, of Tucson, Arizona. The two successful essays were entitled, respectively: "The Potamogetons in Relation to Pond Culture" and "An Investigation of the Causes of Autonomic Movements in a Succulent Plant." These annual prizes are awarded for the two best essays submitted on subjects selected by a committee of the society. For the years 1916 and 1917 the committee announces that competitive essays will be received on "any subject in the field of natural history" thus allowing wide scope.

THE Howard Taylor Ricketts Prize for research in the department of pathology and hygiene and bacteriology at the University of

Chicago has this year been awarded to Miss Maud Slye for her work on "The Influence of Inheritance on Spontaneous Cancer Formation in Mice." This prize is awarded annually on May 3, the anniversary of Dr. Rickett's death from typhus fever acquired while investigating that disease in Mexico City.

MR. C. E. LESHER, associate geologist of the land-classification board of the United States Geological Survey, has been assigned by the director of the survey to take charge of the work of compiling the statistics of coal production published in the annual volume "Mineral Resources." This work has heretofore been directly under Edward W. Parker, whose resignation from the Geological Survey is effective July 1.

DR. EDWARD C. ROSENOW, of the Memorial Institute of Infectious Diseases, Chicago, has been appointed chief of bacteriologic research, Mayo Foundation, Rochester, Minn. Dr. Rosenow will begin his new work on July 1.

THE following have been appointed by the trustees of Columbia University as the board of managers of the George Crocker Special Fund for Cancer Research for three years from July 1 next: Dr. T. Matlack Cheesman, Dr. Walter Mendelson, President N. M. Butler, Dean Samuel W. Lambert, Professor Warfield T. Longcope, Professor William G. MacCallum and Professor Francis Carter Wood.

DR. J. ALEXANDER MURRAY has been appointed general superintendent of the Imperial Cancer Research Fund and director of the laboratories, in succession to Dr. E. F. Bashford.

DR. LENTZ, director of the Prussian imperial health office, has been appointed the reporting councilor in the medical department of the ministry of the interior, as successor of Dr. Abel, who has been transferred to the Institute of Hygiene at Jena.

MR. LEO E. MILLER writes to the American Museum of Natural History from South America that he has completed his work in Antioquia and on March 30 sailed from Barranquilla to Colon *en route* to Bolivia, where it is proposed to inaugurate a zoological sur-

vey similar to that which the museum has conducted in Colombia for the past five years. Mr. Miller's collections, amounting to two thousand birds and mammals, has been received by the museum.

DR. ROBERT F. GRIGGS, of the department of botany at the Ohio State University, has been selected by the National Geographic Society to lead an expedition to study the vegetation of the Katmai district in Alaska. The purpose of the expedition is to study the means by which vegetation gains a foothold on the volcanic ash with which the country was covered by the eruption of Katmai in 1912. This ash-covered region is many hundreds of miles in extent, covering a portion of the Alaska Peninsula and the greater part of Kadiak Island.

AN excursion to the Hawaiian Islands, under the charge of Professor George H. Barton, director of the Teachers' School of Science, will leave Boston on July 4.

MR. LLOYD B. SMITH, of the Associated Geological Engineers, has returned to Pittsburgh, after spending three months in the oil fields of Mexico and Central America.

ALVIN J. COX, Ph.D. (Breslau), instructor in chemistry at Stanford University from 1904 to 1906, has returned to San Francisco on a leave of absence to take charge of certain features of the Philippine exhibits at the exposition. He has held the position of director of the United States bureau of science in the Philippine Islands.

PROFESSOR W. H. KAVANAUGH, head of the experimental engineering department, University of Minnesota, has been appointed a member of the international jury of award, department of machinery, at the Panama Exposition, San Francisco. Professor Kavanaugh is spending the month of May at the exposition judging exhibits.

PROFESSOR H. H. STOEK, head of the department of mining engineering of the University of Illinois, has been granted a leave of absence to act as a member of the Committee on Awards for Mining Exhibits at the San Francisco Exhibition. Professor Stoek is now in California.

PROFESSOR ROBERT A. MILLIKAN, of the University of Chicago, delivered the "Thomas Lectures" at Richmond College in April. The general topic was "The New Physics." In his first lecture Dr. Millikan recounted some of the important recent discoveries in the field of radioactivity and X-rays and discussed the significance of these facts to modern science and life. The second lecture was given to a description of some of the properties of the electron, and the methods by which these properties had been discovered.

DIRECTOR JOHN F. HAYFORD, of the College of Engineering of Northwestern University, addressed the engineering sub-division of the Chicago Association of Commerce on Friday evening, May 14, on the subject "Chicago as an Engineering Center."

PROFESSOR LOUIS KAHLENBERG, of the University of Wisconsin, delivered the annual address before Phi Lambda Upsilon, the honorary chemical society of the University of Michigan, at Ann Arbor, on May 13. The subject was "A Neglected Principle of Chemistry and some of its Applications."

UNIVERSITY AND EDUCATIONAL NEWS

THE trust estate of \$3,250,000 left by Miss Elizabeth Thompson, will on the death of her brother and sister be equally divided among the following institutions: The Children's Aid Society, the New York Association for the Improvement of the Condition of the Poor, the New York Historical Society, the Society of the New York Hospital, the Presbyterian Hospital and Columbia University.

THE Michigan legislature has appropriated \$350,000 for the erection of a new university library building for the University of Michigan.

THE James Buchanan Brady Urological Institute of the Johns Hopkins Hospital, made possible through Mr. Brady's gift of \$600,000, was formally opened on May 4. Among those who made speeches were Dr. Hugh H. Young, head of the institute, and Dr. William H. Welch.

DR. THOMAS ORDWAY, of the Harvard Medical School, has accepted the deanship of the

Albany Medical College. Dr. Ordway was formerly professor of pathology in the medical school of which he now becomes dean.

G. V. COPSON, now specializing in dairy bacteriology in the University of Berne, Switzerland, has been appointed instructor in pathological and dairy bacteriology at the Oregon Agricultural College.

DR. E. F. MALONE, of the department of anatomy, University of Cincinnati, has been promoted to be associate professor of anatomy.

DR. ERNEST LINWOOD WALKER, formerly chief of the biological laboratory of the Federal Bureau of Science, and chief of the department of medical zoology at the University of the Philippines, Manila, has been appointed associate professor of tropical medicine at the George Williams Hooper Foundation for Medical Research, University of California.

PROFESSOR R. C. LODGE, who has been this year at the University of Minnesota, has been appointed professor of philosophy and psychology at the University of Alberta.

DISCUSSION AND CORRESPONDENCE

BALANCED SOLUTIONS AND NUTRITIVE SOLUTIONS

MR. TRUE's article on "Antagonism and Balanced Solutions"¹ closes with the following remarks.

In both sea water and the more or less dilute nutrient solutions present in the soil, normal life is sustained, as a rule, only in mixtures of proper proportions and necessary concentration. Since salts are required in both cases to overcome the harmful action of pure water, as well as that of the salts themselves, there seems to be no reason to seek to limit the use of the term "balanced solutions" in the manner suggested by Loeb and Osterhout. Unless we admit that malnutrition due to a deficiency in nutrient salts is a form of toxicity excited by the substances present, we can hardly escape the alternative proposition that the missing salts are injurious *in absentia*.

Since the writer is responsible for the introduction of the term physiologically balanced salt solutions,² he may be pardoned for pointing out that in his opinion neither of the

¹ SCIENCE, N. S., XLI., No. 1061, p. 653, 1915.

² Loeb, *Am. Jour. Physiol.*, III., p. 445, 1900.